

AMENDMENTS TO THE CLAIMS

Claim 1 (currently amended): A substrate processing system comprising:

an ozone generator provided with electrodes and configured to generate an ozone-containing gas by applying an electric discharge produced by the electrodes to an oxygen-containing gas supplied to the ozone generator;

a plurality of processing chambers each adapted to process therein a substrate with the ozone-containing gas generated by the ozone generator;

a plurality of ozone-containing gas supply lines each connecting the ozone generator to each of the processing chambers;

a flow regulator adapted to regulate a flow rate of the oxygen-containing gas supplied to the ozone generator; and

a controller configured to determine demand for the ozone-containing gas based on a changed number of processing chambers processing with the ozone-containing gas, and configured to control the flow regulator to regulate a flow rate of the oxygen-containing gas being supplied to the ozone generator so that a generating rate of the ozone-containing gas being generated by the ozone generator and thus a flow rate of the ozone-containing gas being discharged from the ozone generator to be supplied to the processing chamber or chambers substantially correspond ~~corresponds~~ to the ozone-containing gas demand based on the changed number of processing chambers processing with the ozone-containing gas.

Claim 2 (original): The substrate processing system according to claim 1 further comprising a plurality of variable throttles each provided in each of the ozone-containing gas supply lines to adjust an ozone-containing gas distribution ratio between the ozone-containing gas supply lines.

Claim 3 (original): The substrate processing system according to claim 2 further comprising a plurality of flow measuring devices each provided respectively in the ozone-containing gas supply lines for measuring respective flow rates of the ozone-containing gas flowing into the processing chambers.

Claim 4 (original): The substrate processing system according to claim 1, wherein, the oxygen-containing gas contains oxygen gas and nitrogen gas, and wherein the flow regulator includes an oxygen gas flow regulating device adapted to regulate a flow rate of the oxygen gas supplied to the ozone generator and a nitrogen gas flow regulating device adapted to regulate a flow rate of the nitrogen gas supplied to the ozone generator.

Claim 5 (original): The substrate processing system according to claim 4, wherein the oxygen-containing gas further includes carbon dioxide gas, and wherein the flow regulator further includes a carbon dioxide gas flow regulating device adapted to regulate a flow rate of the carbon dioxide gas supplied to the ozone generator.

Claim 6 (original): The substrate processing system according to claim 1, further comprising:

a power regulator adapted to regulate a voltage applied across the electrodes of the ozone generator; and

an ozone concentration measuring device that measures an ozone concentration of the ozone-containing gas generated by the ozone generator,

wherein the controller is also configured to control the power regulator to regulate the voltage being applied across the electrodes so that an ozone concentration of the ozone-containing gas being measured by the measuring device coincides with a target value.

Claim 7 (original): The substrate processing system according to claim 1 further comprising:

a steam generator adapted to generate a water vapor; and

a plurality of steam supply lines each adapted to supply the water vapor to each of the processing chambers via each of the ozone-containing gas supply lines.

Claim 8 (previously presented): The substrate processing system according to claim 7 further comprising:

a steam discharge line connected to the steam generator and adapted to discharge therethrough a part of the water vapor generated by the steam generator without supplying it to the processing chambers; and

a flow control device provided in the steam discharge line to regulate a flow rate of the water vapor discharged through the steam discharge line,

wherein the controller is also configured to determine a water vapor demand of processes to be carried out in the processing chambers, and configured to control the flow control device to regulate the flow rate of the water vapor being discharged through the steam discharge line so that a sum of flow rates of the water vapor being supplied to the processing chamber or chambers complies with the water vapor demand.

Claim 9 (original): The substrate processing system according to claim 1 further comprising:

an additional ozone generator provided with electrodes and configured to generate an ozone-containing gas by applying an electric discharge produced by the electrodes of the additional ozone generator to an oxygen-containing gas supplied to the additional ozone generator; and

a valve adapted to stop supplying the oxygen-containing gas into the additional ozone generator,

wherein the controller is also configured to control the valve to stop supplying the oxygen-containing gas into the additional ozone generator in order to stop generating the ozone-containing gas by the additional ozone generator, when the ozone-containing gas demand is less than a predetermined value.

Claim 10 (original): The system according to claim 1 further comprising a plurality of processing fluid discharge lines connected respectively to the processing chambers to discharge a processing fluid therefrom, each of the processing fluid discharge lines being provided therein with a flow control device.

Claims 11-23 (canceled)

Claim 24 (previously presented): The substrate processing system according to claim 1, wherein each of the ozone-containing gas supply lines is provided therein with a flow control valve adapted to control a flow rate of the ozone-containing gas supplied to the chamber connected to the ozone-containing gas supply line through the ozone-containing gas supply line, and wherein the controller is configured to determine the ozone-containing gas demand based on signals from the control valves which respectively indicate conditions of the flow control valves.

Claim 25 (previously presented): The substrate processing system according to claim 1, wherein the controller is configured to determine the ozone-containing gas demand based on a predetermined process recipe which defines a sequence of processes to be executed in the processing chambers.

Claim 26 (previously presented): The substrate processing system according to claim 4, wherein the nitrogen gas flow regulating device is configured to regulate the flow rate of the nitrogen gas supplied to the ozone generator so that the ratio of the nitrogen gas supplied to the ozone generator to the oxygen gas supplied to the ozone generator is kept constant regardless of a flow rate of the ozone-containing gas discharged from the ozone generator.